OHIO AGRICULTURAL EXPERIMENT STATION
Wooster, Ohio
March 22, 1962

Forestry Department Series No. 32
(Revised)

WOODS IMPROVEMENT IN THE WISELEY TRACT – OAK OPENINGS

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Experimental Forest No. 18, one of 27 such woodlands overseen by the Forestry Department of the Ohio Agricultural Experiment Station, is located near Neapolis, close to where Fulton, Henry and Lucas counties adjoin. Termed the Wiseley Tract of the Maumee State Forest, this 34-acre woods lies in the "Oak Openings" of northwestern Ohio, a region that author Louis Campbell speaks of as "an island of unproductive soil in a countryside famous for its farm lands".

The Wiseley Tract has a number of characteristic features. Its meandering belts of knoll and swale exhibit marked contrasts in soils, drainage and vegetation. Hillocks of coarse Plainfield sand support an upland oak type of forest, in which the white and black oak species are predominant. On adjacent low ground, comprised of Newton and Maumee fine sand, grows a swamp hardwood association of pin oak, cottonwood, soft maple, elm and hackberry. Uncommon shrubs to be seen are buckthorn, prickly ash and sandbar willow.

Forest diversity is evinced, too, by the timber size-classes, their distribution and merchantability. Groups of close-spaced, nearly mature trees border on open grassy groves or clumps of young growth. Tree form varies accordingly, from boles clean and columnar to those extremely limby. Neither saplings nor poles are very abundant. Presumably this tract had been heavily cut over, hi-graded and grazed prior to its purchase by the Ohio Division of Forestry.

The 1956 Inventory

Since its establishment as an experimental forest, in October 1947, the Wiseley Tract has served to demonstrate good forest management practices to woods owners and others in northwestern Ohio. Success at forest farming though depends on keeping a continuous inventory of the woodland growing-stock. Hence research foresters measure and evaluate, at 5-year intervals, the paint-numbered trees in 60 permanent 1/5-acre sample plots, and record the merchantable volume by species, diameter, grade and vigor classes. These data are derived from periodic net increment.

Planned improvement cutting, whereby cut and growth are kept in balance, is the basis of sustained yield forest management. Such treatment of timber as a renewable crop can result in a profitable woodland enterprise as a part of the farm business. Though field crops and livestock locally take precedence over forestry, nowhere in Ohio are soils and climate more conducive to tree growth so, why the abuse and neglect of farmwoods? Given the proper culture these can produce prime hardwood sawlogs at top-most capacity.

Our charted data depict the status of the Wiseley Tract at each successive inventory. It obviously is much understocked. At its 1956 re-measurement, for example, it had but 29.6 sawtimber trees per acre containing 4456 bd. ft. net volume, by International log scale. The site when fully stocked could support perhaps 10 to 12 M bd. ft. on an acre.

Forest improvement here has to be a long-continued undertaking. The reasons are various. Throughout the tract there exist wide-spreading trees of low quality. Deduction for defects ranges in some instances, from 15 to 30 percent or more. Sawlog-size cull trees* average .75 to the acre. Dutch elm disease is so rampant that American elm, comprising one-seventh of the sawtimber volume, is rated a "high-risk" species. Problems such as these require years of constructive effort to solve.

For timber to thrive as a farm crop, cutting should seldom exceed the sum total of growth and ingrowth between successive loggings. In 1947 the Wiseley Tract underwent an improvement cut totalling 325 net bd. ft. per acre. During October 1956 it was re-marked for a much heavier cut, the equivalent of its previous 9-years' growth of 1317 bd. ft. to the acre. Nearly half (44%) of the marked volume was elm, with the

*Cull trees are those estimated to be less than 50 percent merchantable

remainder defective or showing no promise for sawtimber. Unwanted trees which are unprofitable to fell should be girdled or poisoned, so later harvest cuts may provide adequate returns to an owner.

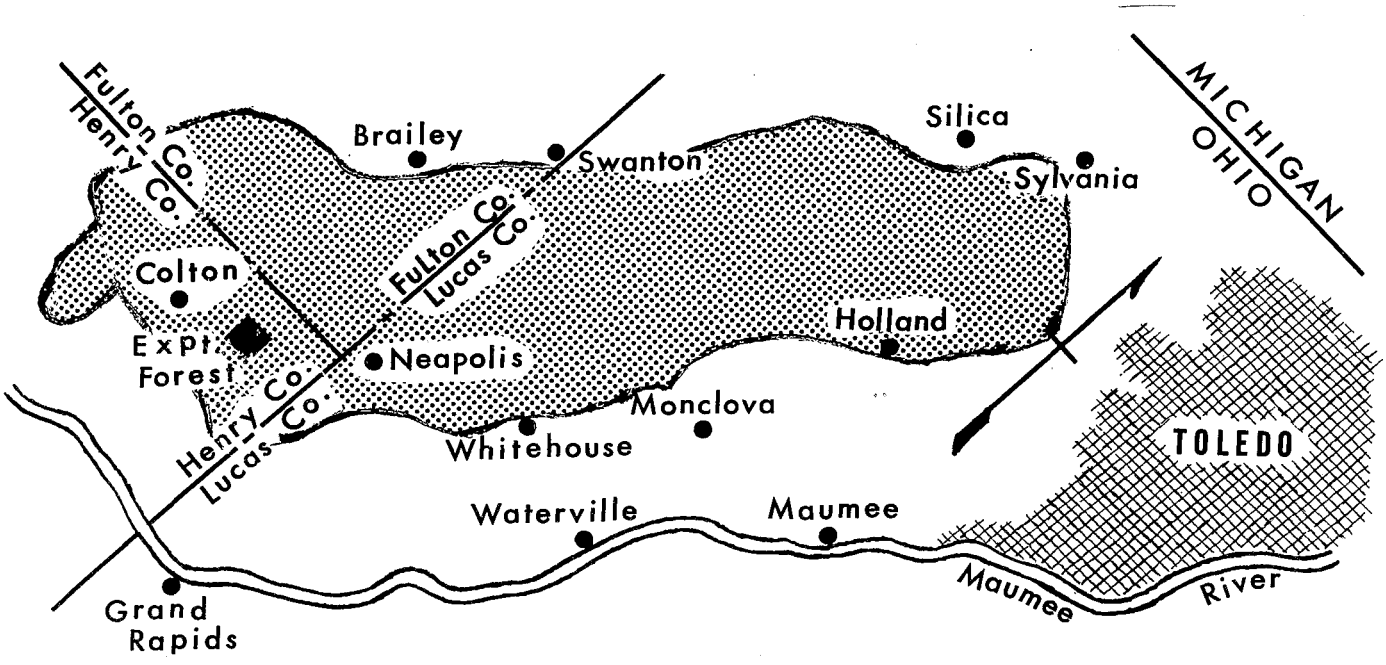
The ultimate goal, applicable to any farmwoods, is to have a fully-stocked, all-aged stand with a sustained output of high quality forest products.

The 1961 Inventory

Our recent chart portrays the condition of the Wiseley Tract after this improvement cut was completed. The operation removed 1416 bd. ft. per acre, which reduced the growing-stock below that recorded at the previous inventory (4201 as compared to 4457 net bd. ft.). It embraced, as it should, all diameter classes, otherwise the woods could be degraded by "selective cutting" of only its largest or best trees.

The Wiseley Tract today shows better species composition, quality of stocking, and vigor, due to the harvesting of trees overmature, overcrowded, poorly formed and diseased. Elm now is a minor stand component, insofar as trees of sawtimber size are concerned. Cull trees are reduced to two in the sample plots, and not more than a dozen exist in the forest. A substantial ingrowth of saplings and poles augurs well for the future. Quality growth henceforth should increase steadily.

Periodic removal of the trees of least promise affords growing space to others which are more desirable, insuring thriftier, more merchantable timber for the farmwoods owner. Forest improvement is a prerequisite step to profitable long term management.



THE OAK OPENINGS REGION OF NORTHWESTERN OHIO
SHOWING LOCATION OF EXPERIMENTAL FOREST

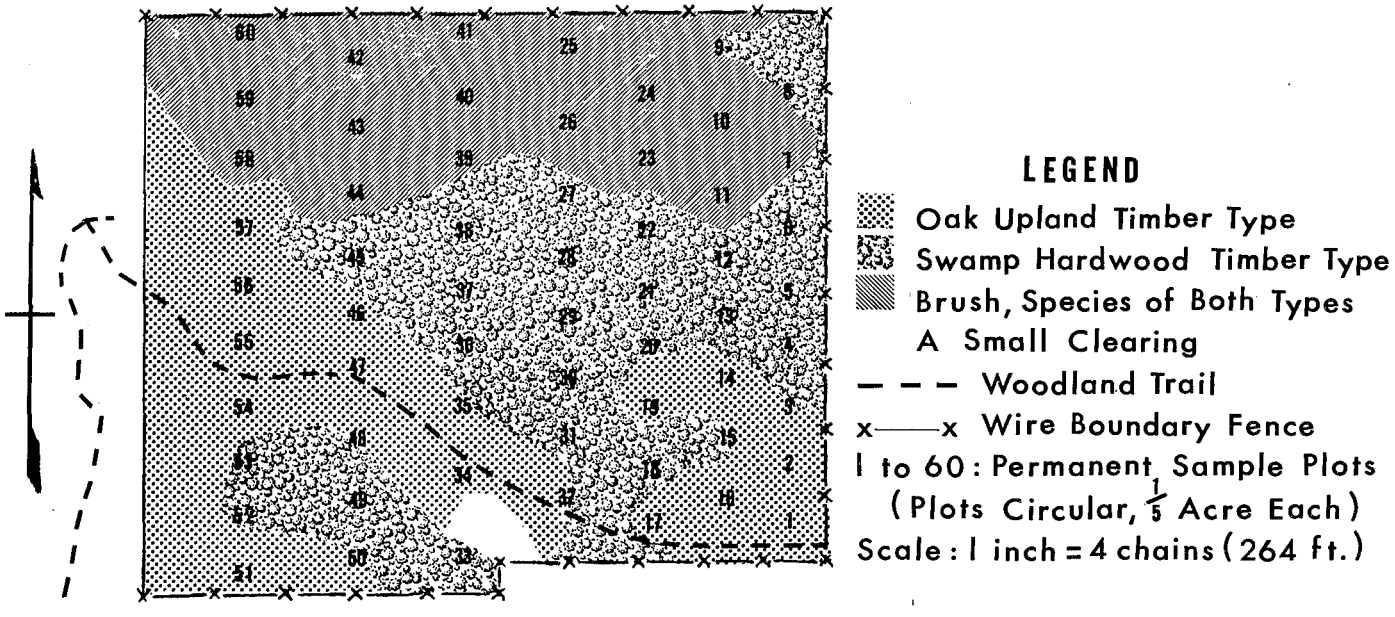
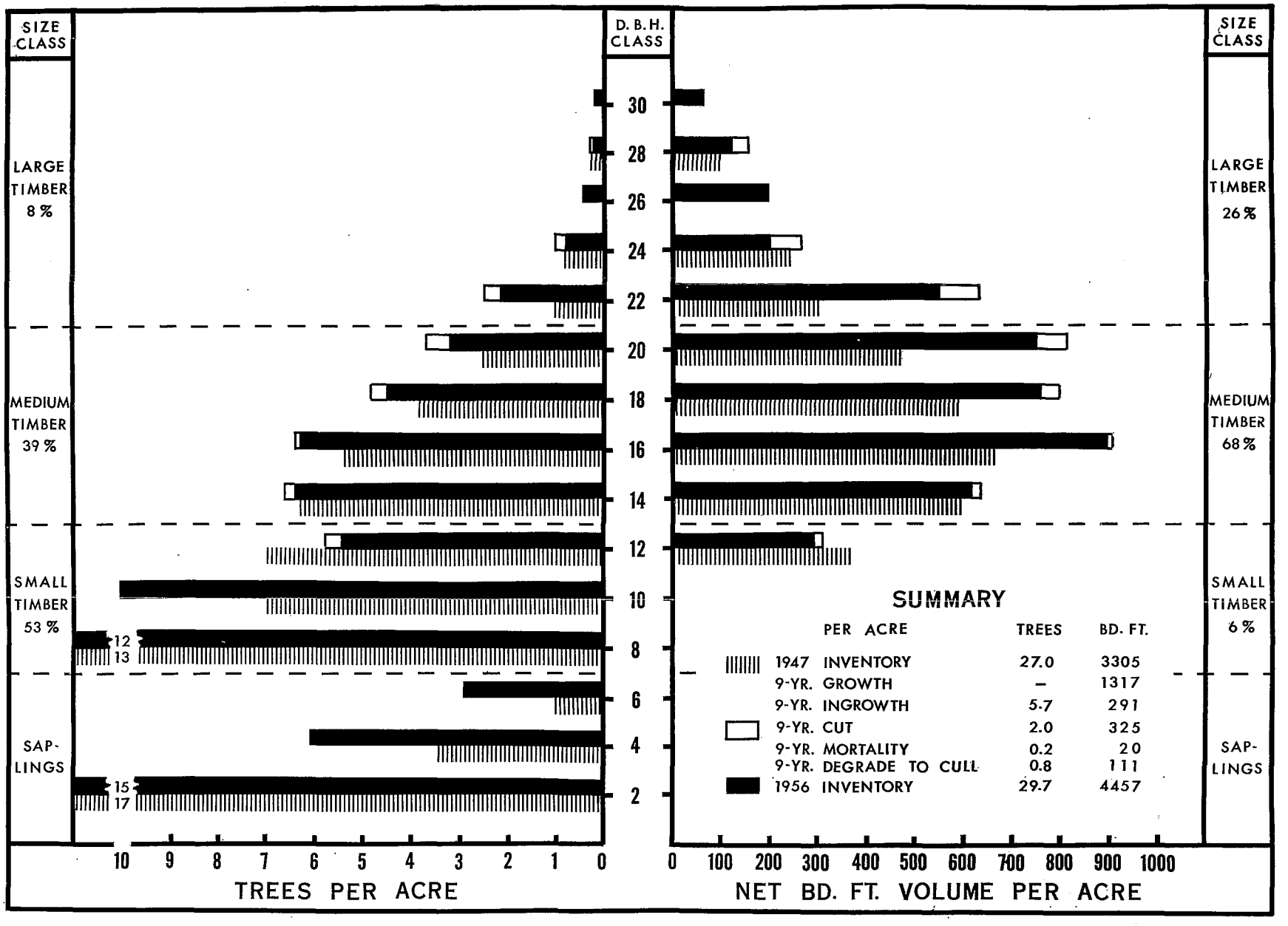


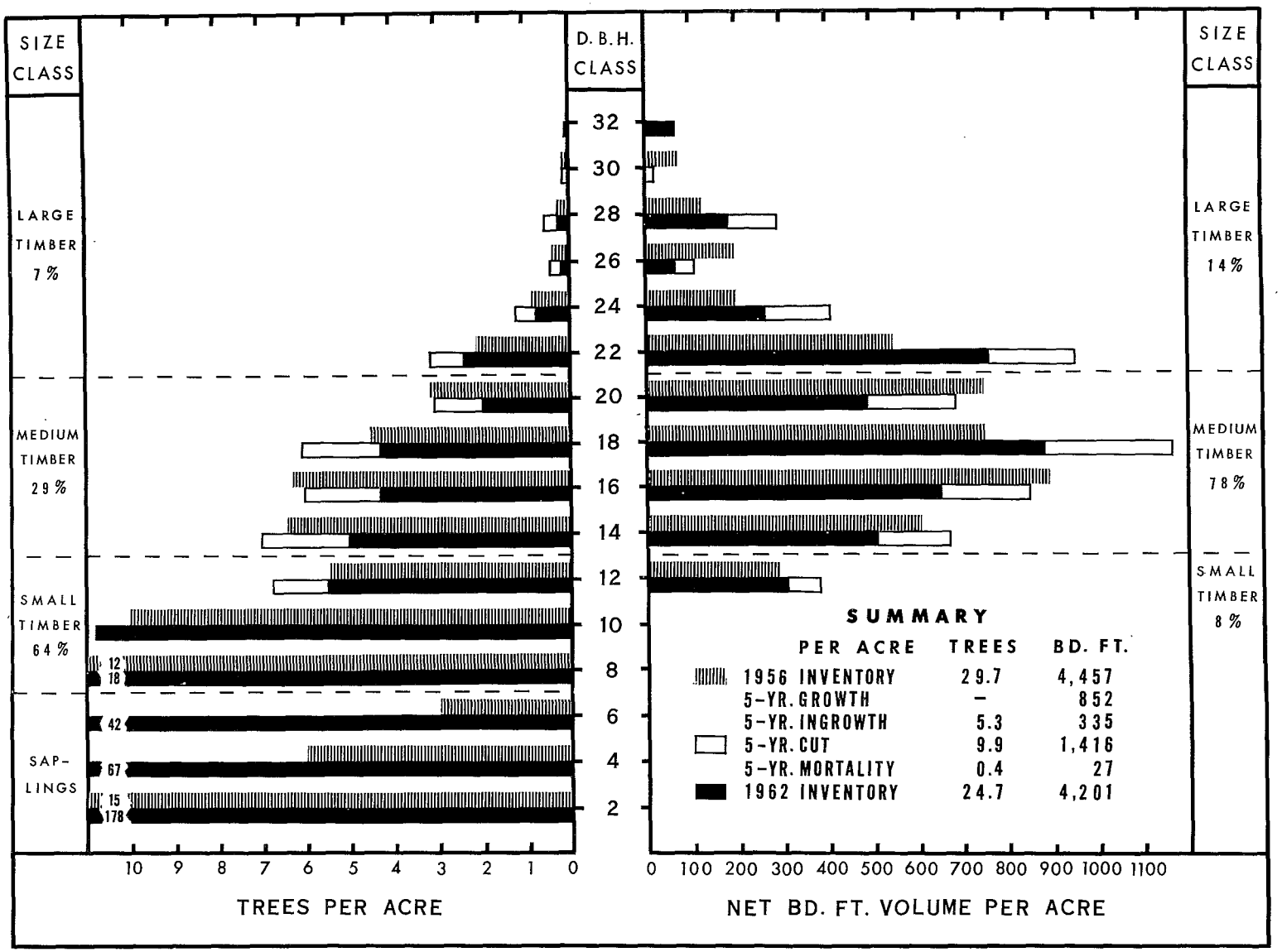
DIAGRAM OF 34-ACRE EXPERIMENTAL FOREST
IN N.W. 1/4 SECTION 24, WASHINGTON TWP, HENRY CO, OHIO



GROWING STOCK IN WISELEY TRACT

WASHINGTON TWP; HENRY CO; OHIO

1947 – 1956



GROWING-STOCK IN WISELEY TRACT EXPERIMENTAL FOREST

WASHINGTON TOWNSHIP, HENRY COUNTY, OHIO

1956-1962

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